

Influence of the storage conditions on the quality of bee pollen

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Abstract

Bee pollen is a healthful food product with a good nutritional profile and therapeutic properties. However, the storage conditions may affect its composition and characteristics. This study aimed to evaluate the effect of the storage conditions on chemical composition of different monofloral bee pollen samples, namely acidity (pH), water activity, total acidity and the content of fibre, ash, reducing sugars, protein, lipids, total phenols and total flavonoids. Nine bee pollen samples were harvested in three places in the Northeast of Portugal and divided into two aliquots: one was frozen at -20°C , while the other was dried at 42°C , until reaching moisture of 6–8%. Even though differences in the botanical origin are a significant factor explaining the variation between samples, the storage method was also found to be a highly significant factor for several parameters: reducing sugars, lipids, total phenols and total flavonoids. Higher counts were obtained on the frozen bee pollen samples regarding aerobic mesophiles and moulds and yeasts. Even so, for all samples and conservation methods, the values were below those given by the standards.

Our study suggests that it is better to consume bee pollen frozen at -20°C in comparison to that dried in an electric oven.

Key words: frozen vs dried, microbiological analysis, physico-chemical analysis.

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